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AUTHOR Levenstein, Phyllis
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ABSTRACT

Described in this report is a home-based, cognitive-affective intervention program involving 93 mothers and their children. This demonstration program sought to show that the principal cognitive element missing from the experience of low-income children in preparation for schooling is a sufficient amount of concept-building verbal interaction in the family, especially between mother and child. Four successive cohorts, entering in 1968, 1969, 1970, and 1971, in groups ranging from 70 percent to 100 percent black were enrolled in the program. The program consisted of 92 semi-weekly, half-hour home sessions spread over 2 years. These were held by interveners called 'Toy Demonstrators' who were trained to show a mother, by participating in home play sessions with her child, how to interact verbally to enhance the child's conceptual and socioemotional development. Test results (Stanford-Binet and WICS, Peabody Picture Vocabulary Test, Reading and Arithmetic Standard Score on the Wide Range Achievement Test, and Child's Behavior Traits) for the four cohorts of children indicate that the program probably does work, within the context of the research project, with fairly substantial and stable IQ gains of about 17 points. (CS)

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A Message from Home: A Home-Based Intervention Method for Low-Income Preschoolers[1]

Phyllis Levenstein
Verbal Interaction Project[2]
of
Family Service Association of Nassau County, Inc.
and
State University of New York at Stony Brook

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A Message from Home: A Home-Based Intervention Method for Low-Income Preschoolers *

Phyllis Levenstein

This paper will be a voice from the "society" part of the conference's title, describing an intervention program, not for the mentally retarded, but one intended for a much larger segment of society. I bring you a message from home, where society has its beginnings; and, more specifically, from 93 low-income mothers who, in their homes, have taken the major role in a program to prevent educational disadvantage for their two to four year old children. By age two the mean group IQ of their children, reported in many studies of similar groups to be normal in infancy, had already taken the downward slide which predicts educational disability. That trend was reversed when the mothers became more directly involved in the education of their young children than had been allowed by poverty and insufficient awareness of the importance of simple verbal-interaction techniques.

The message from home is that the family embodied in the dyadic mother-child relationship within the home -- the core of almost every family -- appears to provide a potent system to foster the child's cognitive development, when certain relatively limited conditions are met. It is a message that may have application for the amelioration of some forms of mental retardation.

The 93 mothers, with their children, were enrolled in the two-year version of the Mother-Child Home Program in four successive yearly cohorts, entering in 1968, 1969, 1970, and 1971, in groups ranging from 70% to 100% Black. The program was developed and researched by the Verbal Interaction Project, using a quasi-experimental design, starting with a pilot in 1965 (Levenstein and Sunley, 1968;

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Levenstein, 1970). It is a home-based, cognitive-affective program, differing in some aspects from other systematically researched home intervention programs started around the same time by such major investigators as Gordon, Gray, Schaefer, and Weikart with low-income populations in different parts of the country. These programs were successful in producing short-term cognitive gains which, however, tended to dissipate by early elementary school years. The VIP's method differed from all of these programs in some important ways which perhaps accounted not only for the achievement of short-term gains in IQ but for the stability of these gains at least into first grade.

The Mother-Child Home Program, beside its home-based locale as an overall necessary condition, included as corollary conditions the choice of age two to four years for the child as the critical period for home-based intervention; the genuine active involvement of the mother without teaching, or counseling her, and with careful avoidance of even subtle coercion; the participation of the child as part of an interacting, mutually supportive social system (the mother-child dyad); a non-didactic intervener whose effectiveness was independent of prior skills, education, or special charisma; a simple, predefined, but flexible curriculum focusing on the promotion of verbal interaction between mother and child; self-motivating and stable curriculum materials; and feasibility for implementation outside of the research project, what is sometimes rather repellingly called "product exportability".

Since 1968, each September a new group of children entered the two year program yearly. By June of 1973, 93 children and their mothers had completed it. In brief, the program consisted of 92 semi-weekly, half-hour Home Sessions spread over two years by interveners called "Toy Demonstrators" trained to show a mother by participating in home play sessions with her child, how to interact verbally to enhance the child's conceptual and socioemotional development, using permanently assigned, commercially available books and toys as the curriculum materials. The Toy Demonstrator, after involving the mother early in the Home Session, gradually faded into the background; the mother was free to adopt the modeled behavior, or not, as she wished. The 46 Home Sessions each year roughly followed the local school calendar for about seven months. Altogether the program required about 23 clock hours of the dyad's time with a Toy Demonstrator each year, although mothers were of course encouraged to play and read with their children every day. The cost of

thus giving low-income mothers access to the hidden curriculum of many middle income homes, by giving her the materials and the techniques to use them, is estimated at about $400 a year for each child. The cost can be kept so low because it includes the free manpower of the mothers acting as their children's main teachers, and the free working space contributed by recipient families.

The Toy Demonstrators were paid former mother-participants, of high school education, and unpaid women volunteers (usually college educated) who were trained together in an initial training workshop, and in weekly group supervisory conferences throughout the program year. Twelve books and eleven toys, all carefully selected on explicit criteria (Form #162-VISM Evaluation Form) were given to the mother for the child each year, in a planned weekly sequence of increasingly complex curriculum materials (Form #56-VISM List). The Toy Demonstrator modeled verbal interaction techniques, and inter-personal behavior functional to learning, focused around the toys and books (called Verbal Interaction Stimulus Materials, or "VISM", using a structured cognitive curriculum (Form #K-VISIT Handbook), built around each book and toy. The chief lesson conveyed to the TD in supervision was that the program was aimed more at the mother than at the child, and that the main and enduring responsibility for the child's education at this age must be the mother's, not the TD's. Therefore, ability to eliminate herself as an active participant from Home Sessions was the best sign of her success.

The proposition basic to the program was that the principal cognitive element missing from the experience of low-income children in preparation for schooling is a sufficient amount of concept-building verbal interaction in the family, around perceptually rich and ordered stimuli, and embedded in the affective matrix of the child's most enduring relationships, especially that with his mother. This proposition was developed from an interdisciplinary network of theory and investigations concerning the roles of language and of early family relationships in intellectual development. It ranged from the comments of Cassirer (1944) and Werner (1967), on the links between symbolization and styles of intellect, to the findings of anthropologists, sociologists and psychologists on the impact of the social structure on psychological development by way of the family. The theory was perhaps best summarized in Bruner's phrase "instrumental conceptualism" (Bruner et al, 1966) which we take to mean the growth of the concepts necessary

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to cognitive development through interchange of the young child's language with meaningful experiences in his environment. The program can be said to be an illustration of Schaefer's more recent notion of "ur-education", which is probably well summed up in a paragraph not by Schaefer, but by Bronfenbrenner:

> In the early years of life the psychological development of the child is enhanced through his involvement in progressively more complex, enduring patterns of reciprocal, contingent interaction with persons with whom he has established a mutual and enduring attachment. (Bronfenbrenner, in press)

The research of the program's cognitive and socioemotional effects included the goals indispensable to intervention evaluations: tests of internal validity ("Does it work in the research project?") and of extrenal validity, or generalization ("Will it work in other settings?") (Campbell and Stanley, 1963). The measures used to answer these questions were standardized and project developed tests of the cognitive and affective development of treated and untreated children.

But the research also went beyond these goals. It was concerned with the feasibility (including quality control) of the program in other settings and with other low-income populations than those of the project. And it was also concerned with the desirability of the program, not only in terms of its attractiveness to the target low-income population, but in relation to the values of a democratic society. Since the issues of feasibility and desirability are of pivotal importance to the social usefulness of an intervention program, no matter what the significance of the basic research findings, the VIP assumed a triple burden from the beginning. The program had to be developed for acceptability to the target population and to society; for the possibility of broad and perhaps national implementation; and the research data had to warrant dissemination.

The results for the four cohorts of children entering the program from 1968 to 1971 indicate that the program probably does work, within the research project, with fairly substantial and stable IQ gains of about 17 points. (Table 1, page 5.)

Most of the gains endured for the two cohorts (1968 and 1969) who had entered kindergarten and first grade at the time of the last follow-up study conducted from November 1972 to March 1973. The mean IQ was at 105.4 for the group in which the majority had reached first grade, and at 113.3 for the group in which most were

Table 1

Longitudinal IQ Outcomes

Treated (two Years of MCHP) and Untreated Groups, 1968 - 1972
(Cattell, Stanford-Binet, WISC)

Entry Year	Group and Program		Pre Test	Number of Months after Pretest: Post I 8	Post II 20	28	40	52
	Treated							
1968	T_1	N[a]	21	21	19	21	21	21
		IQ	90.4	101.8	109.0	108.3	107.3	105.4
		SD[b]	9.1	9.0	8.5	11.1	11.6	13.0
		Gain	--	11.4**	17.4**	17.9**	16.9**	15.0**
	Age (Grade[c])		2	2½	3½	4	5(K)	6(1)
1969	T_6	N	23	22	23	--	23	--
		IQ	88.8	105.6	108.2	--	113.3	--
		SD	13.8	16.5	15.6	--	15.9	--
		Gain	--	17.4**	19.4**	--	24.5 **	--
	Age (Grade)		2	2½	3½	--	5(K)	--
1970	T_8	N	23	23	23	--	--	--
		IQ	90.0	106.4	106.9	--	--	--
		SD	9.6	15.1	13.1	--	--	--
		Gain	--	16.3**	16.9**	--	--	--
	Age (Grade)		2	2½	3½	--	--	--
1971	T_9	N	26	26	26	--	--	--
		IQ	91.6	105.8	108.1	--	--	--
		SD	13.0	9.8	9.4	--	--	--
		Gain	--	14.2**	16.5**	--	--	--
	Age (Grade)		2	2½	3½	--	--	--
	Untreated (tested "after-only" in Follow-upD)							
1972	C_5	N	--	--	--	--	--	30
		IQ	--	--	--	--	--	91.0
		SD	--	--	--	--	--	11.5
		Gain	--	--	--	--	--	--
	Age (Grade)		--	--	--	--	--	6(1)

** $p < .01$

[a] Ss in latest test data

[b] Calculated from pretest IQ

[c] School grades for 50% + of group

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Table 2

Comparison of Matched Treated (Two Years of MCHP) and Untreated Groups on Cognitive and Socioemotional Measures at Follow-up D, 1972 - 1973

Measures	T_1 Group 1968 2-Year Treated			C_5 Group 1972 Tested after only			Difference of means		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	Score	t value	p <
Stanford-Binet and WISC: general IQ	21	105.4	13.0	30	91.0	11.5	14.4	4.18	.01
Peabody Picture Vocabulary Test: Verbal IQ	21	97.6	13.6	30	89.7	11.6	7.9	2.22	.05
Reading Standard Score*, Wide Range Achievement Test	15	103.9	7.7	30	95.0	12.9	8.9	2.45	.02
Arithmetic Standard Score*, Wide Range Achievement Test	15	106.0	13.3	30	95.0	13.9	11.0	2.55	.02
Child's Behavior Traits, raw score: socioemotional coping skills	21	77.2	16.7	30	66.1	15.9	11.1	2.41	.02

*As calculated in Schaie and Roberts, 1970.

in kindergarten. On the other hand (Table 2,page 6),a group of first grade children (Group C_5) recruited in 1972 for participation as an "after only" untreated group with no previous contact with the VIP but matched to the 1968 treated cohort (Group T_1) on the same low-income criteria met by the treated groups demonstrated a much lower IQ mean, of 91. (The low income criteria were eligibility for low-income housing, residence in rented housing, parents not above the 12th grade education or skilled occupation.) (Table 2, page 6.)

Moreover, when the two matched groups were compared with each other, the treated T_1 group was found to be significantly superior to the untreated C_5 group, not only in general IQ but also in other cognitive areas: verbal IQ, reading achievement, and arithmetic achievement.

The two groups also differed significantly in socioemotional coping skills, as rated by their classroom teachers who were unaware of the treated or untreated status of the children, on an instrument developed by the Verbal Interaction Project. (Form 65-A,B Child's Behavior Traits). The latter was the "Child's Behavior Traits", a 20 item criterion-based Likert-type scale yielding a summative score ranging from 20 to 100, with a score of 60 indicating generally "moderate" presence of coping skills. The T_1 Group scored significantly higher than the C_5 Group on the CBT. (The split-half reliability coefficient for the CBT was .97, indicating the very high internal consistency and reliability of the instrument. It is currently being tested for inter-rater reliability, and for validity.)

These findings must be viewed with some reserve, since they were based on a quasi-experimental research design, with subjects not randomly selected, but recruited from the populations of two low-income housing projects, and from referrals by local social agencies (e.g., social workers of Headstart programs and public health nurses). All families had to meet low-income criteria, and the acceptance rate of eligible families was high, at least 80% each year. But the fact remains that without random assignment of individuals to treated and untreated groups, the conditions of a true experiment were missing, and thus it cannot be said with a high degree of confidence that the differences between groups were due only to treatment effects. This basic requirement of random assignment of subjects to different conditions is now being met for 50 children (25 treated and 25 untreated) in the current 1973-1974 cohort, and it remains to be seen whether similar differences within and between treated and untreated groups will be found.

To compensate for some of the defects of the research design, hampering ability to generalize, the project's Demonstration Center has been supervising replication of the Mother-Child Home Program in 25 other locations in the country, in a variety of organizational settings, with feedback of before-after IQ data to answer the question of external validity. (Form #171 - 3/74 Replicator List.) At the same time, this provides a practical test of the feasibility of applying the program in settings where the personnel may not have the skills of the Project's model program staff. IQ data have been received from eight of these replicators, with their combined posttest results comparing favorably with the model program's data (Table 3, page 9). But again a word of caution is in order. The numbers of children in each replication were usually small, and, perhaps as a result, the IQ gains varied greatly from case to case. Outside replication with much larger Ns is required for reliable information on generalizability of effects. IQ data are now being collected from most of the 25 replicators, and larger replicator Ns are being planned for the next program year, beginning in about July.

However, the labor of the project's Demonstration Center in this pilot dissemination experience has already yielded a great deal of valuable information about the feasibility and the desirability of the program's broad implementation. Some of it is bad news, but most of it is good. The bad news is that organizations are often prevented by lack of money from adopting the program for large enough numbers of children to demonstrate program effects reliably; and that even when they do, the maintenance of model program standards can be very tough.

The good news is in the areas of both desirability and feasibility. In terms of desirability, the program appears to be as attractive to dyads reached by replications, as it is to the project sample, that is, received very enthusiastically. And the dissemination techniques developed by the Demonstration Center appear to preserve the low-key, low-pressure nature of the intervention so as to interfere minimally with family privacy, style, and autonomy, an approach I believe is congruent with a democratic society's respect for human values and human beings. Stanley Milgram's sobering studies at Yale, on obedience to authority, underscore (1974) the social risks of too easily gaining mothers cooperation with a program which can destroy the privacy of their homes; and they also vividly illustrate the covert sabotage which can occur when mothers give surface obedience to accepting a

Verbal Interaction Project (VIP)/Mother-Child Home Program (MCHP)

Table 3: VIP/Mother-Child Home Program Replicators, 1970-1972, General IQ Results

Replicator	Year	Pretest		Posttest-1		Posttest-2		Difference	
		N	IQ	N	IQ	N	IQ	Pre-P1	Pre-P2
1. Paterson, N.J. Family Counseling Serv.	1970-72	7	88.9	7	97.6	7	99.0	8.7	10.1
	1971-72	7	96.6	7	98.3	-	-	1.7	-
2. Newton, Massachusetts Family Counseling Serv. (Region West)	1970-72	5	87.8	4	106.5	5	106.6	15.3	18.8
	1971-72	5	107.0	5	115.8	-	-	8.8	-
3. Pittsfield, Mass. Public Schools	1970-72	16	92.2	16	116.0	15	109.9	23.7***	17.6***
	1971-72	27	97.4	27	111.4	-	-	14.0***	-
4. New York, New York Sheltering Arms Childrens Services	1970-72	6	83.8	6	97.0	6	98.0	13.2***	14.2***
	1971-72	6	91.7	6	94.2	-	-	2.5	-
5. Norristown, Penna. Family Services of Montgomery County	1971-72	8	91.2	6	107.2	-	-	15.8*	-
6. Conway Springs, Kansas Public Schools	1971-72	6	102.7	6	109.0	-	-	6.8*	-
7. Albuquerque, New Mexico Bureau of Indian Affairs (Apache & Pueblo Tribes)	1971-72	11	89.7	11	95.5	-	-	4.7	-
(Control Group, Tested only)	(1971-72)	(10	86.3)	(10	85.6)	(-	-)	(-.7	-)
8. Mineola, New York Nassau County Family Day Care	1971-72	9	97.3	NA		-	-	NA	-
TOTAL (excluding BIA Controls)	1971-72	114	94.0	102	106.0	34	105.1	12.0***	15.6***

*p < .05

**p < .01

***p < .001

(t-test, two tailed)

program they don't really like. Against these dangers, the Mother-Child Home Program has incorporated explicit safeguards which seem to work in replications as well as in the model program.

The apparent feasibility of the program is also good news. Though difficult, it is possible to maintain program quality control, through firm guidelines and through training and monitoring replicator personnel. The program's techniques, curriculum, and materials appear to be transmittable, and they are used effectively by a wide variety of personnel trained as Toy Demonstrators. A large number of well established organizations, with demonstrated capacity to provide program stability, are enthusiastic about the program and are willing to support it with minimal financial supplementation. In short, the dissemination of this family enhancing program appears to be socially feasible.

Whether future out-of-project replications will return more reliable demonstrations of program effectiveness; whether the 1968-1970 cohorts will continue to show long-range effects; and whether the outcome data will repeat the findings for these four cohorts when collected from new groups within a true experimental design -- these are all unresolved riddles. But the data even at this point perhaps warrant consideration of the program's applicability to other populations vulnerable to educational disadvantage, such as the borderline or mildly retarded.

A re-phrasing of the "message from home" appears to be that a surprisingly small amount of intervention geared specifically (and respectfully) to tapping the mighty resources of the mother-child interactional system within the family can have relatively strong and long-lasting effects for basically normal children. Perhaps the same can be true for mentally retarded children as well.

References

Bronfenbrenner, U. In press. Is Early Intervention Effective? Office of Child Development, U. S. Dept. of HEW.

Bruner, J. S. et al. 1966. Studies in Cognitive Growth. New York: John Wiley and Sons.

Campbell, D. T. and Stanley, J. S. 1963. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally.

Cassir, E. 1944. An Essay on Man. New Haven: Yale University Press.

Levenstein, P. 1970. Cognitive growth in preschoolers through verbal interaction with their mothers. Am.J. of Orthopsychiatry, 40, 426-432.

Levenstein, P. and Sunley, R. 1968. Stimulation of verbal interaction between disadvantaged mothers and children. Am. J. of Orthopsychiatry, 38, 116 - 121.

Schaefer, E. S. 1970. Need for early and continuing education. In V. M. Denenberg, ed., Education of the Infant and Young Child. New York: Academic Press, 61 - 82.

Schaie, K. W. and Roberts, J. 1970. School Achievement of Children 6 - 11 years as Measured by the Reading and Arithmetic Subtests of the Wide Range Achievement Test. Series 11, Number 103, National Health Survey, National Center for Health Statistics, Public Health Service, U. S. Dept. of HEW. Washington, D. C.: U. S. Governament Printing Office.

Milgram, Stanley. 1974. Obediance to Authority. New York: Harper and Row.